Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Unlicensed Use of the 6 GHz Band	)	ET Docket No. 18-295
	)	
Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz	)	GN Docket No. 17-183
	)	
	)	

REPLY COMMENTS OF FRONTIER COMMUNICATIONS CORPORATION AND WINDSTREAM SERVICES, LLC

Frontier Communications Corporation ("Frontier") and Windstream Services, LLC ("Windstream") hereby submit reply comments to the *6 GHz Notice of Proposed Rulemaking* ("*NPRM*").[1] Between the two companies, Frontier and Windstream have successfully expanded broadband to millions of rural Americans and are eager to continue bringing faster broadband to millions more. Our companies believe that smart rules enabling fixed point-to-multipoint deployments – including the Commission's proposals for unlicensed uses in the 6 GHz Band – would provide another key tool in the toolbox to reach the hardest to serve rural Americans. By moving forward with its proposal to unleash a significant amount of unlicensed mid-band spectrum, and by updating its rules to allow for higher power fixed point-to-multipoint deployments in the U-NII-5 and U-NII-7 Bands – consistent with the U-NII-3 Band – the Commission can accomplish its dual goals of promoting 5G leadership and closing the digital divide. Additionally, by opening up wide swaths of unlicensed spectrum, the Commission can

[1] *Unlicensed Use of the 6 GHz Band*, Notice of Proposed Rulemaking, ET Docket No. 18-295, FCC 18-147 (October 24, 2018) ("*NPRM*").

increase the value of all home internet connections for next generation use cases, including virtual reality, augmented reality, artificial intelligence, and other future innovations.

I. FRONTIER AND WINDSTREAM HAVE EXPANDED BROADBAND TO MILLIONS OF RURAL AMERICANS, AND ACCESS TO MID-BAND SPECTRUM CAN HELP BOTH COMPANIES BUILD ON THAT TRACK RECORD.

Our companies have an extensive track record of bringing broadband to rural Americans, particularly in areas to which other large internet providers will not build. Between the two companies, Frontier and Windstream are in the process of investing more than three billion dollars to bring broadband to more than a million homes and businesses (representing almost two and a half million Americans) through year-end 2020 as part of Phase II of the Connect America Fund ("CAF") program. We look forward to continuing expanding on these great successes, and as we have explained in other Commission dockets, smart wireless rules can help fuel further rural broadband deployment in the hardest to reach places.[2]

As part of this rural broadband expansion, Frontier and Windstream are busy deploying wireless broadband, including using unlicensed 5 GHz mid-band spectrum. For example, Windstream has announced that it is offering fixed wireless to more than 350,000 businesses in 50 markets[3] and offers fixed wireless broadband to thousands of rural households.[4] Similarly,

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[2] *See, e.g.*, Comments of Frontier, Windstream, and Consolidated, GN Docket No. 17-183 & RM-11791 (Oct. 2, 2017) (*"Mid-Size ILECs 3.7-4.2 Comments*"); Comments of Frontier, Windstream, and Consolidated, GN Docket 17-258 (Dec. 28, 2017) ("*Mid-Size ILECs CBRS Comments*"); Comments of Frontier and Windstream, GN Docket 18-122 (Oct. 29. 2018).

[3] *See* Carl Weinschenk, *Windstream Fixed Wireless Now Available to More Than 350,000 Businesses*, Telecompetitor (Sept. 12, 2018), https://www.telecompetitor.com/windstream-fixed-wireless-now-available-to-more-than-350000-businesses/.

[4] Mike Dano, *Windstream Peels Back the Curtain on Its Fixed Wireless Deployments*¸ FierceWireless (May 7, 2018), https://www.fiercewireless.com/wireless/windstream-peels-back-curtain-its-fixed-wireless-deployments (explaining that Windstream is offering wireless

Frontier has deployed fixed wireless in several rural areas covering thousands of households."[5] Frontier is testing 3.5 GHz CBRS spectrum[6] and remains eager for that spectrum – both licensed and unlicensed – to become available. Depending on the precise rules and current equipment configurations, Frontier and Windstream may be able to update existing 5 GHz deployments to provide even faster speeds using both the 5 GHz and 6 GHz Bands.

To the extent the Commission offers more spectrum that accommodates fixed point-to-multipoint wireless, the Commission can help accelerate these types of rural investments and bridge the digital divide.

II. COMMENTERS BROADLY AGREE THAT A WIDE SWATH OF UNLICENSED SPECTRUM IS INTEGRAL TO THE COUNTRY'S 5G STRATEGY, AND THE 6 GHZ BAND, AS PROPOSED BY THE COMMISSION, IS THE PERFECT HOME FOR SUCH A BAND.

Rarely does a Commission proposal receive such widespread support, especially in a proceeding with so many disparate commenters. But the Commission's proposal to open up hundreds of megahertz of spectrum for unlicensed uses and to build on the success of the original U-NII band evidenced a real agreement and excitement for additional unlicensed spectrum and shows the strength of the Commission's proposal. Frontier and Windstream wholeheartedly

broadband to thousands in Iowa and Oklahoma and is looking at further deployments in locations in Missouri, Nebraska, and elsewhere).

[5] *See, e.g.*, Frontier Communications, *Q1 2018 Results – Earnings Call Transcript* (May 1, 2018), *available at* https://bit.ly/2LlzZMb; *see also* Perley McBride, CFO, Frontier Communications, *Interview at Goldman Sachs Annual Communacopia Conference* (Sept. 12, 2017), *available at* http://bit.ly/2xeHbla (explaining "[Frontier] see[s] [wireless] as another opportunity to . . . create a better broadband product" in rural America).

[6] *See* Frontier Communications Corporation, Experimental License, File No. 0264-EX-CN-2018 (granted June 6, 2018).

support the Commission's proposals to open up as much of the 6 GHz Band as possible while, of course, protecting incumbent users.

III. COMMENTERS BROADLY SUPPORT RULES ALLOWING FOR FIXED POINT-TO-MULTIPOINT DEPLOYMENTS, WHICH COULD GREATLY EXPAND BROADBAND AVAILABILITY AND SPEEDS IN RURAL AMERICA.

As with the Commission's proposal to generally open up the band to unlicensed uses, commenters generally agreed the Commission's rules should allow for higher gain antennas, like for the U-NII-3 Band.[7] Frontier and Windstream agree. Mid-band spectrum, particularly the 3.7-4.2 GHz band, is prime spectrum for rural fixed wireless broadband deployment. This spectrum enables high-bandwidth applications while still allowing for non-line-of-sight deployments over considerable distance.

While we understand that certain existing users may be concerned about harmful interference, we believe that productive coexistence with fixed wireless is possible, especially

[7] *See, e.g.*, Comments of Apple Inc., Broadcom Inc., Cisco Systems, Inc., Facebook, Inc., Google LLC, Hewlett Packard Enterprise, Intel Corporation, Marvell Semiconductor, Inc., Microsoft Corporation, Qualcomm Incorporated, and Ruckus Networks, ET Docket No. 18-295 at 68 (Feb. 15, 2019) ("The 6 GHz PSD and antenna gain rules should be closely aligned with the successful 5 GHz U-N-3 Band rules."); Comments of NCTA, ET Docket No. 18-295 at 10 (Feb. 15, 2019) ("NCTA also would support higher power operations on a fixed P2P or fixed point-to-multipoint (P2MP) basis in rural and underserved areas."); Comments of the Dynamic Spectrum Alliance, ET Docket No. 18-295 at 15 (Feb. 15, 2019) ("The Commission should allow higher-gain antennas and steerable point-to-point and point-to-multipoint operations under AFC control."); Comments of Cambium Networks, ET Docket No. 18-295 at 6 (Feb. 15, 2019) ("[T]he availability of an option for higher device power would bring many benefits to enabling more cost-effective and spectrally efficient broadband deployments, particularly in rural areas."); Comments of Broadcom Inc., ET Docket No. 18-295 at 38 (Feb. 15, 2019) ("Authorizing outdoor point-to-point and point-to-multipoint operations in the 6 GHz band is in the public interest because it will support the efficient, low-cost expansion of broadband services to rural and underserved communities."); Comments of Starry, ET Docket No 18-295 at 2 (Feb. 15, 2019) ("[T]he Commission should permit higher-gain and steerable antennas for outdoor point-to-multipoint operations along with higher power fixed client devices in all areas."); Comments of WISPA, ET Docket No. 18-295 at iii (Feb. 15, 2019) ("WISPA strongly urges the Commission to allow fixed client devices operating at conducted power up to +18 dBm in the

when mediated through an automatic frequency coordination ("AFC") system. Frontier, for instance, uses hundreds of licensed paths in the existing 6 GHz Band for critical services and recognizes the vital importance of protecting these and similar incumbent uses. Nonetheless, in our predictive judgment, we can work towards rules that protect existing users while unleashing the benefits of new productive next generation unlicensed uses in the 6 GHz Band. Point to multipoint deployments, such as fixed wireless, are much more controlled and contained compared to mobile uses, and the AFC system will be able to protect incumbent users and mediate any conflict.

Frontier and Windstream therefore support allowing higher powered fixed wireless deployments in all feasible portions of the band. Working towards rules that enable fixed point-to-multipoint deployments is well worth any effort – fixed deployments in rural areas could allow us to serve additional hard-to-reach locations and enable faster speeds to others. Based on our experiences, in certain of the hardest to reach, most expensive areas to serve, fixed wireless is another tool we could use to reach more locations or upgrade underserved locations with fast speeds (certainly 25/3 Mbps and faster – potentially much faster if based on the amount of spectrum the Commission is making available). Fixed point-to-multipoint is another effective way to leverage CAF's investments in driving fiber closer to less-densely populated areas of the nation and to reach Americans who otherwise would be too far or difficult to connect to broadband.

With our companies already deploying fixed wireless, and with our extensive ongoing investments in rural America, our companies stand ready and eager to deploy more broadband in

5925-6425 MHz (U-NII-5) and 6525-6875 MHz (U-NII-7) bands to use up to 18 dB antenna gain before reducing power.").

the most rural parts of our footprint as soon as additional spectrum (and associated equipment) become available.

IV. CONCLUSION.

The Commission is long overdue for unleashing a significant amount of unlicensed spectrum that can live up to the benefits provided by the Commission's original U-NII bands. The Commission's proposed rules for the 6 GHz Band – with some slight tweaks to enable fixed wireless deployments, especially in rural areas – appear able to live up to that promise. Such a wide swath of unlicensed spectrum can help usher in next-generation 5G uses, and the Commission has an opportunity to accelerate the multi-billion-dollar investments it is making through the CAF program to unleash faster broadband for even more rural Americans. Additionally, opening up a significant amount of unlicensed spectrum will only increase the value and utility of all residential broadband connections. Unleashing significant unlicensed spectrum and enabling point-to-multipoint fixed broadband deployments will pay great dividends for rural America and accelerate America's 5G future.

Respectfully submitted,

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